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The politics of ecology: the debate on wildlife and people in India, 1970-95*

by

Mahesh Rangarajan**

Introduction

In 1979, in a lecture delivered in Delhi, the distinguished naturalist M. Krishnan referred to the choice before the conservation movement in India as one between Vedanthangal and Asoka.[1] The metaphors used require some explanation. Vedanthangal (Tamil for hunter's tank, a misnomer if there ever was one) is a bird sanctuary near the city of Madras where oral tradition has it that nesting water birds have been protected for nearly two millenia. When British soldiers shot at the storks in 1798, the residents marched off in protest to the Collector, who issued a proclamation that no one would be allowed to harm the birds again. Krishnan acknowledged the efficacy of such conservation attempts growing out of religious custom or tradition but then turned to another precedent. The emperor Asoka in the third century BC had in his Pillar edicts decreed certain animals and birds as protected. There was also evidence in the Arthashastra that reserves known as Abharanyas had been set aside especially to safeguard elephants. The historicity of these references need not concern us here as much as the conclusion drawn from history. The past was invoked to suggest a strategy for the future. There was a choice between voluntary efforts from the grassroots and state-sponsored schemes from above. One was founded on voluntary participation and the other on the coercive ability of the government. Krishnan warned that there was no time to try the Vedanthangal way. The pressures of demographic and economic expansion left no option but relying on state machinery to save India's wildlife from certain extinction. If there was a tradition to be followed, it was the Asokan one. Krishnan had served in several forra: the advisory body known as the Indian Board for Wildlife set up in 1952 and on the Steering Committee for Project Tiger. Launched in 1973, the latter was at the time the world's largest single wildlife conservation programme. The basic philosophy of the project was identical to the one championed by Krishnan in his lecture and in his other writings. It was essential to set aside some land, preferably five per cent to be preserved 'free of all human activities' (except for protection).[2] A country could be lost otherwise than by invasion or conquest, by 'dissipation of its entity from within', and for its own cultural biological identity, it was essential for an India of the future to retain representative patches of fauna and flora in their original state. While the precise quantum of the area to be set aside was specified differently at various times, the nub of the argument was clear.[3] Total environmental preservation in a few selected areas was central to a strategy for conservation. It is also important that the key instrument of change was to be the Union government. States were seen as hostages to special interests that would prevent any long-term programme from getting off the ground. If necessary, additional areas could, it was suggested, even be leased by the Centre for 99 years and administered for posterity.[4]

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Krishnan's observations seem especially striking if we examine the present debate about the fate of the Protected Areas. These wildlife sanctuaries and national parks now cover 4.3 per cent of the land area of India while their core areas constitute about 1 per cent of the land mass.[5] While their number and area have expanded considerably, there is little disagreement on one basic point: they are in peril. Encroachment by various industrial and commercial interests on their borders and even within their precincts is not new but it has grown rapidly since

1991. In the new climate of liberalisation, sanctuaries have been de-notified to facilitate the location of extractive industry (mining), tourist resorts, manufacturing plants and other development projects.[6] Secondly, in several areas, the administration of Protected Areas is under attack from local residents living either within or on the perimeter of parks. They point to the double standards that deny them access for livelihood needs while allowing commercial forestry and other allied activities.[7] The line taken by Krishnan is still very much the core of official policy. In contrast with the significant, if limited, steps in direction of joint forest management, the appeals for participatory or joint management of Protected Areas have made little headway. This is so despite the fact that the number of people living in and around the latter is now provisionally estimated at 4.5 million and removal of all such populations or closure of all access is neither administratively nor politically feasible.[8] The rights of the future generations and of non-human inhabitants of the planet are seen by wildlifers as being under threat from pressing human demands of the present day.[9] In contrast to the 1970s, some preservationists are willing to invest in ecologically sound development around the sanctuaries in return for further curbs on resource use within the tracts.[10] In common with their predecessors, they see the continued survival of such areas in their natural state as an insurance and an investment in terms of protecting potentially useful species. The moral and ethical aspects are stressed equally forcefully.[11] The implication of all this is to retain intact the present structure of bureaucratic control of Protected Areas under the Forest Department. This congruence of interests, of ideologically charged notions of preservation and the specific interests of the foresters is striking.[12]

At the same time, the once-unified tanks of middle class groups are now divided. There is discord even on central issues such as the mechanisms and aims of wildlife conservation. Who is to conserve what and for whom? The wildlife movement has been seen as having two distinct levels, one with a middle class constituency and another in rural centres. This is really a re-working of Krishnan's classification, though the sympathies of analysts are now in a reverse order.[13] While useful, the two-way split between wilderness preservationists and 'popular conservation' misses out on the several shades of grey that lie between such extremes. Even in a limited sense, it cannot account for several consequences of the preservationist projects that transcend the specific aims of their proponents. Even supporters of statist projects could be active proponents of voluntary village-level efforts, even if in a very limited way.[14] Further, the specific interests of wildlife enthusiasts should not blind us to the wider issues of ecologically sound development or of humankind's ethical responsibility to nature that they put on the agenda.

Secondly, I will try to show how even a narrow and limited social group can, over time, generate fresh initiatives and ideas that break up old alliances. Analysts have often written wildlife enthusiasts off as flamingo-lovers and fans of tiger cubs. Guha is appreciative of how they extend the concept of equity from across classes and nations to other species and generations.[15] The question of how to actualise this vision has given rise to new sensibilities that try to take account of the human dimensions of the wildlife question. Even key actors in the drama have changed their views and their constituencies.[16] These ideological debates cannot be divorced from the wider context of the environmental questions in India today and their linkage not only with the ecological problem but with the political and social order that may be conducive to addressing it. A brief look at the preservation agenda is necessary.

Preservation: from ascendancy to crisis

The India of the early 1950s had important continuities in the attitudes and lifestyles of the elite. Hunting continued to be both a privilege and a pastime for officials, princes and the landed classes as it had earlier in the century. In the Madras Presidency, SK Chettur joined the ruler of Venkatagiri in hunting sloth bears from specially constructed towers.[17] When the civil servant Yezdi Gundevia was posted in Mirzapur in 1939 he suspected that no Indian had held the charge till then on account of the excellent opportunities for shikar in the area! Much of his time was spent following up tigers in the jungles and shooting geese in the ponds and lakes.[18] Even after 1947, going out to bag a tiger was considered a 'must' for any aspiring forester. 'Bag your first tiger in your first year' was the motto of the first Indian Inspector General of Forests, who himself accounted for as many as fifty animals.[19] Visiting heads of state could travel out from New Delhi into the hills of Rajasthan to try their luck. Prince Philip, for instance, hunted in Ranthambore as a guest of the Raja of Jaipur in 1961, a fact he was prudent enough not to mention in his foreword to a recent book on the area.[20] Till the abolition of privy purses in 1969, many rulers retained shikar rights in their former princely hunting reserves. There were efforts to protect endangered wild animals and birds, but the continuities in the personnel are again striking. The Indian Board for Wildlife had its first meeting at Mysore in 1952, with the Maharaja being the host. Among the key personalities in policy formulation in the early years were English tea and coffee planters like Randolph Morris and EP Gee, foresters such as PD Stracey and the princes of Bhavnagar (in Gujarat) and Sandur (Karnataka).[21] It was no great surprise that even the attempts to control shooting of tigers in the breeding season in Rajasthan were shot down. As the author of the proposal later recounted, virtually all the members of the advisory board that considered the issue were keen hunters.[22]

The legal continuities were equally significant. Most of today's wildlife parks have been carved out of either princely hunting grounds or Reserved Forests. The latter were part of the vast network of government forests taken over mainly for revenue and strategic reasons from the late nineteenth century onwards. The appropriation of forest wealth was accomplished by outlawing or severely restricting hunting and other kinds of forest-use by tribals and other forest-dependant peoples. Though these efforts were often resisted by both overt and covert means, the legacy of the game laws was to be very significant for the early Indian middle class wildlife enthusiasts. They often uncritically identified with efforts to penalise quail-trappers and deer-catchers, even when the latter were mainly engaged in activities essential for livelihood.[23] As keen hunters themselves, they felt obligated to control those who were competing for the same resource. This extended beyond the human world to certain categories of wild animals. Thus, Randolph Morris and Salim Ali called for increased rewards for killing Himalayan black bears to help build up the numbers of the Kashmir stag. They aimed to save the deer from extinction not to shoot it for trophies, but this was to be achieved by imposing their own rule over nature.[24] Similarly, Stracey praised the killing of jackal cubs to help game birds and of the eradication of wild dogs 'by every possible means' in order to help herbivores.[25] The notion that predators had a role to play in nature's system and would not wipe out a prey species only acquired full official sanction with the launch of Project Tiger. For them, preservation of wildlife was equated with the protection of game birds and animals, whose natural enemies ought to be wiped out or controlled through intrusive measures.

Aesthetic sensibilities towards wild animals in general and to the much-despised large carnivores were on the horizon though this may not have been realised at the time. In 1961, a young Indian and her two sons recounted the scene in the Kenyan reserve of Amboseli in a letter home with the words, 'It was fun to drive around and come across that comic, supercilious creature, the giraffe, the prosperous and plump zebra, fleet-footed gazelles of various kinds and the lordly and kindly (looking at least) lion and his family.. Earlier we had seen a most captivating lion family: two lionesses and cubs.'[26] Even two decades later now as a keynote speaker at a UN Conference in Nairobi, the same Indian would make the journey this time to the Masai Mara reserve on the Tanzanian border.[27] Already, in the Sixties, before her critical role in facilitating and pushing through the preservationist project, Indira Gandhi was perhaps symbolic of a new generation of Indians who related to nature not through the barrel of a gun but with binoculars and field guides. Even as a child, she lost the fear of snakes that is so common to many people. Her mother's youngest brother was 'passionately interested' in all sorts of animals and at one time, 'anything you opened in the house' was likely to have a snake in it.[28] In her letters to the imprisoned Jawaharlal in the winter of 1943, she wrote of how the winter birds were arriving and she had seen two new species in the garden.[29] Living in the Teen Murti house when Nehru was Prime Minister, the family kept a variety of pets, including two tiger cubs, a young leopard and two red pandas.[30] The first red panda was presented to her on a visit to Assam and was only identified with the aid of a book in a library and the injuries sustained by one of he tiger cubs was a cause of great anguish even for a busy prime Minister, Jawaharlal Nehru.[31] At a public level, Mrs Gandhi hosted the first meeting of the Delhi Bird Watchers Society. She was on its executive committee and also served as President for a brief period. The society itself was a very low key group, with talks and meetings at the Teen Murti House.[32] Though politicians are often given to hyperbole, she was perhaps not exaggerating when she later claimed that she was, 'one who had been interested in this subject long before I ever heard the word 'ecology'.[33] Aesthetic sensibilities were always central to her notion of a different relationship with the natural world: there were visits to the Himalayas which she compared to 'Wordsworth's deffodils, an ever-refreshing memory'.[34] These romantic overtones were perhaps also to do with a city-dweller's idealisation of the world of pastures, forests and hills. The idea of the oneness of life and a fascination for the powers of modern sciences also recur in her writings.[35]

While Jawaharlal Nehru had written / the foreword to the book on India's wildlife by the distinguished naturalist Edward Gee a few weeks before his own death, it was only under Mrs. Gandhi that the wildlife issue began to receive attention from the head of government.[36] One critical feature of this new development was the close personal equation she developed with many wildlife enthusiasts. These included officials with a keen interest in conservation, most notably Kailash Sankhala who as Director of Delhi zoo turned up on her birthday with three tiger cubs in a basket.[37] He went on to serve as the first Director of Project Tiger from 1973 to 1977. The hunter turned conservationist Arjan Singh, a gentleman farmer from Lakhimpur Kheri in U.P. also received support from the PM who even asked the chief minister to assist the former who had been, 'ploughing a lonely furrow'.[38] Dr Salim Ali, the famous ornithologist who personally appealed to her to save the Silent valley rain forest enjoyed a close rapport over decades and later praised her for having,' lent her full support to the movement.'[39] Thus, both within the bureaucracy and in the middle class groups who took up the cause of vanishing wildlife, Mrs. Gandhi could draw on a core of support. The relationship was a complex one, with her drawing on them for ideas and extending support to their projects. In return, she cultivated a small constituency that saw her as being above petty politics. The importance of such links in the Western world where eminent scientists and public figures expressed admiration for her is not to be underestimated.[40] This was even more so during critical periods during the Emergency and after her return to power. Support for conservation could tide over her human rights record.

Her own role was to be critical at several junctures, though this also points to the extent to which this set of issues both reflected and helped legitimise the centralisation and personalisation of decision-making power.[41] The run-up the Project Tiger saw her play a crucial role at virtually every step. In 1969, at the meeting of a leading international conservation body in Delhi, she won encomiums for her support to the ban on tiger and leopard skin trade. Foreign exchange was important but 'not at the cost of the life and liberty of some of the most beautiful inhabitants of the country.'[42] The international conservation **groups** in particular the World Wildlife Fund headed by members of European royal families and scientists had a hand in the process. Its Trustee, Guy Mountfort, an expert negotiator lobbied her to constitute a committee that would report to her personally. Such a reliance on single heads of government also extended to dictatorial regimes. Thus Salim Ali regarded it as 'unfortunate' that Ayub Khan fell from power in Pakistan just when he was becoming pro-conservation.[43] Inside India, diverse groups would also directly approach the Prime Minister for action at a local level. In 1982, the Coast Guard was deployed to protect nesting sea turtles on the Orissa coast following a study by the Snake Park biologist J. Vijaya.[44] Such a rapport did not exclude the Gandhian environmentalist Sunderlal Bahuguna who got an ancient oak tree in Naini Tal saved from the army by writing to the Prime Minister.[45] Even this brief list shows the variety of conservationists with close personal links. They included a forester (Sankahala), a dedicated wildlife lover (Arjan Singh) and a grassroots leader on forest issues (Bahuguna). At an organisational level, both old and new groups were represented: Salim Ali headed the Bombay Natural History Society founded 1883 and the reptile specialists were from the Madras Snake park founded in 1971. The centralisation of powers was at both an executive and later at a juridical level. Her letters to the Bihar chief minister in July 1972 did not mince words. She referred him to a complaint on the release of forest lands and said, 'Please look into it and stop it.'[46] In the 42nd Amednment to the Constitution in 1976, forests and wildlife were annexed to the Concurrent list instead of the States list. This gave the Union the formal right to overrule state decisions and laws on these subjects. What is important is the fact that the small but influential wildlife lobby had won significant gains in a short span of time due to support from the PM.[47] Her powers, even when in office, were not unlimited, especially in the face of pressures for fresh development projects. This became clear in the case of Silent Valley in Kerala, where the state government wished to build a dam in one of the last areas of wet evergreen forest. The green light had been given by Mr. Morarji Desai in 1979. Though his successor, Charan Singh leaned in favour of cancellation, it was Mrs Gandhi who defused the issue by appointing two central review committees and eventually scrapping the project in 1983. In doing so, she also proposed alternative ways of generating power and irrigation water: as she told a senior UN official, 'Each province or region gets emotionally attached to some schemes.'[48]

New initiatives included the end of all tiger-hunting, the creation of core zones in the tiger reserves where commercial forestry was halted and the expansion of the Protected Area system in 1980-84. The number of national parks alone increased from 19 to 52.[49] In the process, however, the wider human dimensions of wildlife conservation, especially the vexed issue of local rights received little attention. The eloquence of Mrs Gandhi in her speech to the Stockholm Conference on the need for measures sensitive to people was often not matched in actual decisions.[50] She admitted that people who lived in and around forests could hardly be urged to preserve wild-life unless their own conditions of living were improved.[51] Pressure on the lifestyle of tribals was 'causing her great distress.' But power has its own logic and she pressed for more stern measures to ban tree-cutting in ecologically sensitive areas the very same speech. But her ire was targeted at contractors rather than at the process of commercialisation itself.[52] The attempt to enact a new Forest Law which would be much more stringent was given up because of tribal protest against a measure which seemed to reduce their own rights while not reining in industry.[53] In Mrs. Gandhi's case, the key point was that her own personal awareness of the need for conservation has to be set against the structure through which she sought to achieve these aims. While she did refer to popular religious traditions like those of the Kashmiri saint Nand Rishi on the protection of trees, she was cast in an Asokan mould.[54] There was a major transition in terms of aesthetic sensibilities and often more so in a realisation that the ecological question had its own relevance for developing counties in an unequal world. But the emphasis on equity was absent in the world of realpolitik. It is also clear that wildlife conservation issues helped Mrs. Gandhi cultivate a small but influential lobby in the Western world, even as her Stockholm speech affirmed her role as a leader of the developing countries.

The salient features of the preservation model evolved during her first spell in power were clear. Recovery centred on the extension of conservation areas, and on intensified protection wherever possible. The latter was attempted in the 'core areas' of Project Tiger and in any other national parks where the political circumstances permitted. All bounties for vermin were scrapped, and even removal of dead trees halted in the core zones. The maxim of 'do nothing and don't let anybody do anything' did not stop with forestry, but included local resident people. The continuity lay not in ecological terms but in a wider social sense. The environmental heritage was to be saved through bureaucratic intervention in selected tracts. Wider environmental deterioration was a concern for preservationists but it was not prominent on their agenda. The uniform model of preservation was applied to lands with diverse ecologies. But biological conservation was founded on the premise of the exclusion of resident peoples. Even when the latter were tolerated in the 'buffer' zones of Project Tiger, they were seen as a necessary evil.

But by now there were other voices in the debate. The new currents questioned not only the glaring inequities that often accompanied the old statist model but went beyond in advocating alternatives. What follows is an attempt to sketch out the evolution and basic features of the alternatives. The first group are the pragamatic conservationists who hope to retain the existing system but make it much more sensitive to specific grievances. Next are the constructive workers, also close to the government apparatus, but much more geared to generating employment through more efficient use of natural resources. The third are members of the urban intelligentsia, often more forceful in their criticism of the existing administrative system as well as of market-driven strategies. The last but the most politically crucial are rural activists who often see local control as the starting point for change. While each of these strands has its roots in the past, my attempt here is to focus on the last two decades. The critics are drawn from a variety of backgrounds and, in turn, approach the issue of people and wildlife from very different standpoints. They all agree that the dominant mode of wildlife preservation is in a crisis. Where they differ from the preservationists is in their perception of what constitutes the problem. In particular, they draw distinctions between different groups of human beings and different kinds of ecologies. Many of the issues they raise are of wider importance. In particular, the kind of role they envisage for market forces and for the bureaucracy on the one hand and for rural producers on the other, is of much wider interest for students of the social change.

The categories are used here not as 'ideal types' but as classifications that will help tease out the rich and complex processes at work. They have been grouped together in terms of their responses to four critical aspects of the wildlife-people debate: their attitude to state control, their view of commercialisation, the importance attached to livelihood and their interest in maintaining biological diversity. As will become evident, their attitudes to these issues vary widely but still fall into a pattern. Two caveats are in order. None of the groups of critics subscribes to the prevalent model of growth. Most would agree with the preservationists that the reworking of the people-nature relationships are integral to their vision of a different society. The overlap goes even further: often, as in case of opposing the denotification of sanctuaries to make way for industrial exploitation, they may all find themselves on the same side of the fence. In fact, many of the critical voices of today are those of people who were hardline preservationists until quite recently. But that is to jump ahead of the story. The second caveat is a simple but crucial one. These are not water-tight categories and are not meant to be mutually exclusive. It is possible that the activities of a person or activist group have undergone considerably shifts over time. The interaction between different groups, like the urban and rural activists has often gone so far as to make a division between them difficult. But distinctions are indispensable in identifying patterns and processes of change.

Pragmatic Conservationists

The pragmatic conservationists share many of the premises of the preservation lobby but seek to attain the objectives in a very different way. Their main disagreement is not with the creation of Protected Areas or with totally protected core zones, but with the way in which officials exercise their powers. Their view is shaped by their own experience as field biologists, which often leads them to advocate a more pro-active policy to control marauding animals or to intervene in natural processes. Livelihood issues concerning the rural poor are important to the pragmatic conservationists who see no future for wildlife without informed and sensitive steps to reassure cultivators or stock-keepers of their own security and prosperity. In March 1977, Mrs Gandhi lost the elections and Morarji Desai headed the first non-Congress government in India since independence. A worried Salim Ali was impolitic enough to remind Desai that, 'whatever little success' they had achieved had been because Mrs. Gandhi was a dedicated nature-lover. But Morarji set the wheels turning when he urged the ornithologist to consider afresh that he was only 'preaching to the converted' in the cities. It would be so much more difficult to persuade a villager, 'to preserve the tiger or leopard that has deprived him of his sole worldly possession.' The veteran scientist promptly

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wrote an editorial in the popular magazine, HornBill urging 'an earnest all-out effort to tackle the problem at the grassroot level.'[55] There was no longer any point in looking at the issues in isolation and the 'wider polity which utilises resources' had to be understood more clearly to achieve success.[56] Salim Ali's brief article sums up the potential and the limits of the pragmatic conservationist approach, but its worth was only about to be realised in the years ahead.

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A year later, one of his own associates helped approve a grant to a young doctoral student at Bangalore who wanted to study the dynamics of elephant-human conflict in southern India.[57] Raman Sukumar's findings gave teeth to a new perspective on wildlife management. Saving the Asian elephant was the major objective underlying the research project but besides detailed field surveys of the species, Sukumar set out to look at the question of crop-raiding by the huge animals. His main finding was that a disproportionate amount of crop-destruction was by a relatively small number of male elephants. The herds led by females dubbed 'matriarchs' also did some damage but it paled by comparison. In order to alleviate the sufferings of the ragi cultivators, he favoured culling those male elephants that were certified crop raiders. Of course, the study itself weighed up various other factors, such as the fragmentation of the natural habitat by plantations, fields and dams, but it was the pattern of rogues and raiders that stood out. Interestingly, when these findings were first sent to a biology journal, they were not published as it was anathema to recommend the killing of a threatened species. This 'ivory tower' attitude' to conservation (pardon the metaphor) missed out on the dual significance of the study.[58] It sought to ensure the protection of biological diversity and to address pressing human concerns. This dual emphasis was not entirely new. Journalists also urged decision-makers to pay attention to fears of people on the periphery of wildlife parks.[59] Harjot Singh, a resident of Sampurna nagar on the outskirts of a national park in Uttar Pradesh was quoted as saying, 'The law is a cruel joke. If a man kills a tiger, he has to pay a fine of Rs.50,000 and undergo 10 years imprisonment. If a tiger kills a man, the compensation paid is Rs.5000. If the government wants to protect tigers, then why should it be done over our heads?'[60] In West Bengal, some Forest Officers came up with innovative solutions to ward off tigers from attacking fishermen and woodcutters in the mangroves of the Sundarbans.[61] But Sukumar's work was presented in a scientific study in a verifiable format. It may not have been evident at the time but it was only the first in the line.

The wider problem his work pointed to was the need to craft a solution to issues that continued to bedevil many areas in India with large populations of mega mega-herbivores or carnivores. The general picture of the retreat of wildlife under human pressure at the sub-continental level had to be squared with the realities at the local level. It was possible for a species to be rare at the macro-level but to be present in large numbers in a certain region. The problem was to weigh which kind of human land-use was exacerbating conflict and to identify particular aspects of the behaviour or ecology of a particular species that made it or people prone to conflict. While elephants are creatures of relatively wetter forests in South Asia, another large mammal living in more open, dry areas in northern and central India had been reduced to one relict population in Gujarat. The Asiatic lion, protected by the Nawab of Junagadh from around 1900 went through two population bottlenecks but by the 1970s was recovering under protection. Studies by the American scientists, Berwick and Joslin and lobbying by the World Wildlife Fund had got the state government to shift many of the local buffalo-keeping maldharis out of a core area of the Gir.[62] Maldharis remained in the rest of the 1500 square kilometre sanctuary but the objective was still 'the restoration' of the rest of the reserve by the progressive withdrawal of the remaining cattle.[63] As the lions, the prey and the vegetation recovered, a new problem surfaced: after nearly a century, the Gir had a spate of attacks by lions on human beings. A new study by Ravi Chellam from Saurashtra university overturned much of the earlier logic.[64] He pointed out that the lion population in the reserve had built up and the territorial nature of the prides forced a spillover into adjoining areas. Here, the lions came into conflict with people and with cattle. Saberwal, then working on a project for the Wildlife Institute of India, followed up the details of lion kills of people and found that Scheduled Caste labourers who worked on pump sets at night were the most vulnerable. The policy suggestion was similar to Sukumar's: remove the excess lions by capture or shooting. Further, there was no need to remove maldharis from the rest of Gir. He still favoured curbs as on cutting down of the riverine forests, but in this new view, maldharis could coexist with the lions if they were given prompt compensation for cattle losses. Pastoralism and a large carnivore could coexist because the forest cover in the area was still intact. To relieve pressure from incoming cattle, fodder reserves elsewhere ought to be built up. The rehabilitation efforts had been a failure with many of the relocated families being in a much worse state. The policy of relocation was held to be sound but its implementation seen to be tardy and insensitive.[65]

Pragmatic solutions also appeal to another genre of researchers who worked with wildlife outside forested areas. The birds and animals of scrub and grassland often live in the proximity of villages and setting aside large areas for protection is simply out of the question. The extension of cultivation over the plains regions and river valleys has advanced so far as to make it impossible to locate large stretches of land that are uncultivated. The Aligarh biologist Asad Rahmani, an associate of Salim Ali advocated a flexible strategy to protect the great Indian bustard. This ground living bird, the second heaviest on earth, returned to certain patches for courtship displays and nesting. The key was to ensure the protection of such patches often only a few dozen hectares large. As these areas were often in revenue lands and on village grazing grounds, Rahmani favoured a mix of preventive and participatory measures.[66] A similar but more conflictual situation emerged in studies on the wolf, unlike the tiger, an inhabitant of the countryside in tracts with dryland farming and sheep or goat-rearing. The wolf has not only been known to lift children in areas like Palamau in Bihar but often kills stock animals.[67] The picture put together is a complex one. The wolves in western India actually gain from dryland farming as they can take cover in the field before the harvest with their young cubs. The extension of perennial irrigation, as in the case of the Rajasthan canal will transform the situation.[68] At another level, in areas like Nanaj near Pune, the shepherds despised the animal for raids on stock but cultivators saw it as the key to controlling the antelope numbers.[69] Clearly, survival for the wolf required an approach that took account of basic facts about its biology and behaviour. As a wide-ranging animal living in low densities, it perforce comes into contact with human settlements. Many shepherd communities regularly kill the cubs to protect their herds: the only answer would be to provide the wolf with a system of 'perpetual care'. The continued existence of vanishing species required sustained attention to the problems of those people who shared their habitats.[70]

Certain basic features about the pragmatic conservationists are worth further attention. The conflicts between people and animals were broken up and viewed in a disagreggated way. Neither lions nor elephants were inherently dangerous: but certain individual specimens were prone to come into conflict with people. An understanding of their life cycles and the vulnerabilities of different groups of human land-users was crucial. In one case, the grain cultivators and in the other labourers and cattle-keepers were the most vulnerable group. Here, we see a widening of sensibilities towards different groups of humans.

At the same time, the preservation of a species is critical but they feel, they do not have duty to conserve 'each and every individual of the species.'[71] The efficient management of a resource rather than an ethicaly driven campaign to make all human-animal relations equal marks the attitude of the pragmatic conservationists. The emphasis is less on the inalienable right of all living things to life and there is a candid openness about the possibilities of earning more revenue or generating better incomes. The element of pragmatism is crucial. In the absence of strict measures against aberrant carnivores, the result would be a 'backlash'. None of these scientists sees an alternative to a role for enforcement agencies of the state, but they advocate exercising power in a very different way. For one, knowledge would not only be gathered through the official machinery which is often incapable of flexible responses because of a lack of information or research capabilities.

Constructive Work

Sukumar's own initiation into wildlife biology had begun as a bird watcher in a small forest then at the edge of the southern Indian metropolis of Madras. By this time, this forest, the Guindy park was already the site of innovative approaches to reptile conservation that were harbingers of change. It was here in the Madras snake park that Rom Whitaker and his team first saw that the organisation of wildlife economy based tribals as a step towards controlling the trade in Indian wildlife. His biographer is correct in observing that this idea was still ahead of its time, but in retrospect this was a step in a new direction.[72] Constructive work may be the best category in which to fit the activities aimed at creative solutions around existing skills and within the exchange economy. In the process, such groups have often widened the terms of debate from one about preservation or total protection to one about possible sustainable longterm use. Whitaker's own group worked in close conjunction with the Irulas, adivasis who once trapped small game animals, rodents and snakes for a living but were being marginalised by urbanisation and the clearance of scrub forests on the south-western coastline. The effort was to draw upon Irula skills, to which the exchange economy was not alien, but to provide means by which they could get better terms of trade without depleting the numbers of reptiles. These two broad features: of pushing for change by improving the bargaining position of 'losers' in development and of augmenting the resource base remain the hallmark of constructive work groups.

In the case of the Madras Snake park, the origins lay in a protection venture centred on captive-breeding of reptiles. The small plot adjacent to the Guindy park was a beehive of activity, but the dilemma facing the Irulas soon became evident. The snake skin trade was of the order of thousands of skins a year, and the tribals found it profitable. The poem quoted by Zai Whitaker summed up the attitude in the Snake park, 'Russels viper, burning bright, Do not hiss and do not bite, We are trying to save your skin, From hand bags, wallets and their kin.' But the flip side of the coin was that snake venom was highly valuable, the poison from a krait being worth as much as Rs.3000 a gram. But the late Sixties, the Irulas were not only the 'backbone of the snake skin trade' but were also catching snakes to extract venom for making anti-venin. The bid to form a snake-catchers cooperative made only slow progress but the organisation was registered in 1978. Every Friday, Irulas from the areas surrounding Madras would make their way to the park with their deadly quarry, which would be 'milked for venom' and released a few weeks later in the wild. The ban on snake skin exports and the curbing of the trade had worsened the plight of the Irulas but the venom trade provided fresh opportunities. Amendments in the Wildlife Protection Act, 1972 also allowed the capture and 'milking' of the snakes, in contrast to the normally strict ban on killing or trapping species that were endangered and under Schedule 1 of the Act.[73]

But it was not with snakes but with crocodiles that the break with preservation lobbies came. The three species of crocodilians in India were rescued from almost certain extinction through a programme of captive hatching and breeding in which the Snake Park and the Food and Agriculture Organisation played a critical role. Nation-wide surveys showed a decline in numbers due to variety of factors including dams on rivers, killing for skins and for bounties. Crocodile eggs were gathered and hatched for captive rearing, especially in the newly created Crocodile Bank near Madras. The notion of a 'Bank' was a deliberate one: except this would be a bank where crocodiles and not money would multiply.[74] By 1994, there were over 20,000 animals in captive collections, both in the Bank and in Forest Department collections. However, the original purpose of the project was to supply skins to the market using captive-bred specimens. The idea was to harvest a resource in captivity, while the wild population would be augmented through protection and the release of captive-bred specimens. The part of the programme relating to marketing skins has never been realised, as the necessary legal changes have not been brought about. There is virtually no public record of criticisms of marketing crocodile leather, but there are two points often raised by preservationists. One is the problems of enforcement, for poachers could start a parallel trade. The other is the belief that such a trade would mark the triumph of an instrumentalist and exploitative attitude and would undermine the ethical notion that all organisms have a right to life. In recent times, such views impelled Mrs. Maneka Gandhi as Environment Minister in 1990 to order confiscation of a dancing bear from its owner.[75] The upshot of this is clear: the preservationist lobby has defended its stance. The problem is that such a view of nature, however moral it may be, does not often provide much by way of alternatives. The lrula cooperative itself is only a small pilot venture. But the principle of combining 'traditional' skills with modern management techniques is a significant one. A recent proposal is to permit controlled harvesting of the turtle eggs in the great nesting grounds of Garhimatha on the Orissa coast not for trade but for local consumption. As several hundreds of thousands of eggs are destroyed by the tides, this would not affect reproduction rates. Until the sanctuary was created in 1975, the local zamindar collected an 'anda kara' or egg tax from fisherfolk and the foresters took the rest of the eggs for sale. The proposal is not to revive the old hierarchies or the trade but to give people ' a vested interest' that will create a socio-economic base for conservation. Similar sustained use systems have been proposed for as many as six reptile species: these include captive bred populations as well as wild ones.[76] The point about cruelty is acknowledged but as Indraneil Das asks: if domestic animals can be used why not wild ones?[77] The observation is of wider significance: nature does not occur in its pristine and pure state and the practices of capture or consumption by tribals or other direct resource users seem cruel to middle class people.

The 'constructive work' programmes concerned with forest revival are both better developed and more widely known. There are important parallels as well as contrasts with the debate on faunal resources. The struggles over control over forest lands in the colonial period have had their echoes in independent India, where the broad parameters of legislation and executive practice, have if anything, become even more stringent. Foresters have often seen trees in terms of their worth as timber, while across much of the peninsula, peasants and other villagers have drawn a wider variety of usufruct-based products from the forests. These include nuts, fruits, leaf manure and twigs. The commercialisation of non-wood products, such as tendu leaves and harra fruits, sal seeds and mahua flowers has not been matched by better terms of trade for those who gather them. This exploitation of produce-gatherers by mercantile capital and governmental agencies is paralleled by a focus on regeneration of tree species critical for timber such as sal, teak, pines or eucalyptus. The constructive work initiatives in the forestry sector have moved beyond the agenda of employment towards regeneration through entitlement rights for direct resource-users.[78] The orientation of such projects, towards multi-species forests rather than monoculture stands, is conducive to a wider variety of bird and animal life. The reafforestation programmes of the Dasholi Gram Swarajya Sangh over the last two decades have not only seen a very high rate of success in terms of survival rates but also focussed on broadleaf tree species that are central to livelihood. This is in contrast to official programmes in Uttarakhand that have historically been oriented to plantation of conifers that are of limited use in the agrarian economy. The forest protection initiatives in three districts of West Bengal, Midnapur, Purulia and Bankura are perhaps the best known, but they have their counterparts in Orissa and Bihar. A share of forest products for villages in return for protection of the forests on a voluntary basis has enabled extensive regeneration of the sal forests. This itself marks a major shift in terms of technologies of forest management away from production of wood (from the tree trunk) to a host of products taken from the crown like twigs, seeds and leaves. The relative success of Joint

Forest Management in comparison to government forestry has to be seen in perspective: over 75 million hectares are under the Forest Department, and only a small fraction of the land is under JFM.[79] There is also evidence that these practives may not be extended to the Reserved Forests.[80] But the broad principle of joint control has been given a due place in rhetoric. Such efforts are significant because they expand the ability of people, whether peasant women in Chamoli or adivasis in West Bengal to control their own lives. Such efforts should not be dismissed as 'reformist' as they are often a highly creative response to difficult conditions and have positive consequences at a wider level.[81]

More recently, there have been efforts to extend such an approach of Joint Management to the Protected Areas (JMPA). This effort seeks to build on existing arrangements while lobbying for legal and administrative changes. The central premise is that the long-term future of sanctuaries and national parks rests on cooperation of local people with any open-minded forest officer willing to be more accommodative of their needs.[82] The arguments used are out of the book of the pragmatists as the claim is that this will help meet long-term objectives of conservation. As Ashish Kothari writes, 'I do not believe the Forest Department can exercise control even if it wanted to... It is not a question of whether we should try such alternatives or not; we have no choice but to.'[83] While he refers to several cases where popular action has stalled development projects, Kothari points to constructive efforts at conservation around the sanctuaries. Forest Protection Committees formed with the help of a voluntary organisation are helping check timber-poaching in Ranthambore tiger reserve.[84] In Nagaland, the Naga Mothers Association has campaigned against indiscriminate hunting. Unlike government agencies, such groups can motivate people through educational efforts and can mobilise their energies. In official eyes, they play an auxiliary role and not a central one. The provision of basic services via voluntary efforts is also seen by some preservation groups as integral to their own objectives: by relieving pressure on the forests, they create alternatives for people living near parks.[85] Yet, it is not on issues of voluntary support for protection but on increased or secure access to forest products from Protected Areas that the constructive work groups have run into barriers. Even a sympathetic forester observed that conservation was not compatible with continued use of an area. People's support for conservation was 'essential', but Deb Roy felt that if people are partners in management they, 'would certainly bring forward human interest before ecology.'[86] While the debate continues, the broad orientation of the constructive work efforts is clear: it is to push for incremental change by highlighting success at the grassroots. There is clear ground for cooperation with preservation groups in joint operations against commercial interests and for participatory managements outside the Protected Areas. Such efforts may even achieve a measure of success in areas with low-intensity conflicts between government authorities and people but a lot depends on the 'officer on the spot'. What space exists within the system, often hinges on his or her attitude to such efforts.[87] Conversely, without legislative reform, such efforts will remain few and far between.

The constructive workers, unlike some urban intellectuals, do not valourize tradition over modernity. The very nature of their work impels them to combine practices with very different origins. An Irula bringing in a venomous snake for extraction of poison may be deploying a 'traditional' set of skills but is doing so for a new purpose. Venom-extraction is part of modern medicinal practice, and the cooperative is a modern from of organisation. Similarly, the women's groups taking up tree-planting may be extending their own productive role in gathering fodder or firewood to regeneration through protection or planting. But the institutional mechanisms of the Mahila Mandals (women's committees) or of cooperatives with recognised forest rights may be new innovations. Both in terms of technology and social practice such efforts cannot be labelled simply as 'traditional' nor are they uncritical exponents of modernisation. Actually existing practices are much richer than such labels can suggest. This gives them their strength. The problem is that in order to succeed these efforts may need legal recognition which may be denied. Voluntarist constructive work cannot thus escape the legal and administrative hurdles placed in its way. The emphasis is on incremental change via with the market even more than with statist control regimes. The provision of credit and the extension of the bargaining power of gatherers through cooperatives may be combined with provision of basic health services. Of course, such activities may be also integral to the programmes of organisations with a more agitational mode of work. While livelihood is central to their agenda, the actual importance of biodiversity may vary widely depending on the priorities of the group in question. In general, biological diversity may gain as an offshoot of other programmes such as the planting of indigenous tree species.[88] In specific cases, the protection of groves of trees or a wetland, a patch of grassland or of scrub jungle may have worked only because of conscious local efforts.

The urban intelligentsia

One set of critics whose platform calls for a more drastic overhaul of the conservation regime may be classified as members of the urban intelligentsia. Though their social background is often similar to that of other middle class groups, their own research and informal interaction with rural protest groups has led to a reappraisal of the development process itself. In their daily lives, they are often shielded from the direct impact of degradation of the ecosystems to a greater degree than rural activists or constructive workers. In particular, they have been willing to take up specific cases of denial of local rights by the government or the destruction of resources by industry. In general, they are not uncritical supporters of tradition, but they question the style and kind of modernisation that has taken place. Livelihood is important to these critics, but increasingly they favour more far-reaching steps for empowerment of disadvantaged social groups. Biological diversity was often the starting point for many such researchers and activists, but they hope to protect it through innovative and participatory measures, not coercive government machinery.

Perhaps the first attempt to systematically study 'conservation from below' was a report on the sacred groves of the hills around Pune in Maharashtra.[89] Conservation efforts of groups like the Bishnois, a tribe mainly living in Rajasthan have long been a cause celebre among environmentalists.[90] The historian DD Kosambi had investigated the changing cultural and religious significance of sacred sites in the same region. But no one had tried to assess the conservation value of such sites.[91] The findings of the botanist VD Vartak and the young ecologist Madhav Gadgil were revealing. The former was a senior botanist with extensive field knowledge of the region and the latter a junior scientist. The choice of the topic was also influenced in an indirect way by Gadgil's personal acquaintance with Kosambi and the sociologist Iravati Karve, both of whom were based in Pune.[92] The groves, varying in size from a clump of trees to a several acres in size, often remained the last relict stands of vegetation in large areas of countryside. Several rare plant species have since been located in the precincts of such groves elsewhere in India, some of which have survived intact for over 500 years.[93] The two authors argued that self-restraint had been the key to survival of these tracts: extraction of wood was either banned or was very limited. Yet, the picture was far from idyllic, and a coal trader from the town of Mangaon was eying the groves to make charcoal. The perspective of the preservationists was reversed in two ways. Conservation was located in everyday practices of rural people and this tradition was seen as qualitatively better than state-inspired attempts. KC Malhotra, a student of Iravati Karve's joined forces with Madhav Gadgil in a study of different styles of resource-use. Already in the mid-Seventies their work, a combination of an ecologist and an anthropologist, suggested fresh insights into the relationship of different types of land-use and the levels of biological diversity. In their study of pastoralism and hunting in western Maharashtra, they argued that the older systems of trapping game animals were not depleting wild animals in any significant way. Peasants as well as the largely pastoral Nandivalas caught the occasional deer, while the Phasepardhi tribals mainly captured black-bucks. What had completely transformed the region and made such practices unsustainable was the Panchet hydel project and the attendant pressures on the land due to a mix of market forces and new forms of agriculture.[94] This model could lead to simplistic conclusions but it represented a major breakthrough at the time.[95] First, the roles of villains and heroes were reversed.[96] The picture of the ecologically profligate tribal was not the only casualty. After all, the question raised by this was of much wider import. While it shared with previous anthropological writing on adivasis a tendency to romanticise rural society, it went much further than them. The development process itself was directly questioned: it was essential to promote growth but the way in which dams were being built, failures were inevitable. Urban decision-makers were several stages removed from direct dependence on natural resources, and were therefore immune from the immediate consequences of unbalanced development process. 'It is the peasants and tribals depending much more directly on the natural resources who bear the brunt of the development process.'[97] The dominant mode of wildlife protection was not spared as it aimed at preservation 'in the amusement parks of the privileged classes.' Gadgil pointed out how 'the very same people' who favoured the toleration of the occasional killings of people by tigers in the Sundarbans believed that 'monkeys must be shot out because they damage ornamental gardens in cities.'[98]

A significant shift was taking place here, away from reliance on governmental control towards a more locally rooted system. But it was far from complete. Uncultivated lands were important for rural subsistence, while unchecked commercialisation was undermining the basis of survival of wildlife and poor people alike. Gadgil and Malhotra still advocated the creation of nature reserves in three per cent of the land area which would be 'totally free' of human interference and devoted to the preservation of biological diversity.[99] But the seeds of change were contained in the field work which pointed to a long history of human use of even supposedly 'pristine' lands. Critical interventions in public debates on dams and on forest policies by scientists also prepared the ground for more sustained critiques not only of forestry itself but of the wider systems of resource access that were weighted in terms of resource extensive use by elites.[100]

Events on the ground moved ahead at a faster pace. Unlike the government which attempted to enact a more stringent law on forests in 1982, a section of urban researchers and activists veered towards the view taken by tribal groups. There were signs of this even earlier as in the support extended to the Chipko movement in 1974 by botanists from Delhi and in the integration of ecological issues in local-level studies of development.[101] But these did not have the wider resonances of the Great Debate over the 1982 Bill. Deforestation and the decimation of wildlife was seen as the outcome of commercialisation and of the degree to which forest-dependant people had no direct role in the control of natural wealth. The survival of diverse multi-species forests was central to the struggle against commercially oriented monoculture plantations. The mixed forests were seen as crucial in both ecological terms (as they harboured several plant and animal species) and for social reasons (as tribals and non-tribal peasants and artisans used a multitude of species).[102] The battlelines were drawn much more clearly when a student group from Delhi took up the issue of firing on cattle-grazers in the Keoladeo Ghana national park near Bharatpur in November 1982.[103] The former hunting reserve of the local ruler, the park had become a bone of contention between cattle owners and the wildlife authorities. The Indian Board for Wildlife meeting in October 1982 (with Mrs. Gandhi in the chair) decided to close the area to all cattle. The decision was implemented overnight, and in the ensuing tension, the police shot and killed nine people. The report by the Kalpavriksh team had much in common with civil liberties team reports: it blamed the government for not giving adequate warning to the crowds. The patients were interviewed and the issue of compensating deaths was raised. But equally significant was the stance of the group, which was an environmental action group not a civil liberties forum. The closure of the sanctuary was held to be unjust as no alternative had been provided by the authorities. The report had a dual agenda of local rights and of wildlife conservation. It also quoted a Bombay Natural History Society researcher who felt that cattle access was not harmful to the water birds as it controlled the aquatic grasses.[104] Such findings did not receive much attention at the time but subsequently became important.

The next question was inevitable. Was it possible that conservation did not require areas totally free from human presence? And even where these were necessary, local level decisions might suffice. In any case, the core areas of wildlife parks were being reserved for scientific or aesthetic use, but this was a political point. The issue still remained of whether it was at all valid to search for a natural space that would be free of biomass extraction in toto. The legitimacy of schemes like Project Tiger from the very outset was in terms wider than aesthetic sensibilities. The creation of inviolate natural areas free from any human presence other than the protective umbrella of the authorities was justified in terms of its contribution to protecting the specturm of living things. By safeguarding these core areas from human beings, preservationists had argued they were ensuring that biological diversity was kept intact at least in these few oases. They could be baseline areas for research into the working of natural ecological systems. In addition to potentially useful plant species in the wild, researchers could document the complex inter-relation between water, soil and the fauna and flora. The view of these tracts as relict natural areas and their value in terms of biological diversity was central to the case. It is on both these counts that fresh perspectives soon began to emerge. Even in the Amazon basin, this notion of a fresh perspectives soon began to emerge. Even in the Amazon basin, this notion of a nature free of human presence has increasingly come under critical scrutiny. The great basin supported large populations before the Spanish conquest and even now is critical to the livelihood of not less than 2 million people.[105] Similarly, in eastern and southern Africa, the notion of a primeval Eden was itself central to a notion of the continent as an uncivilised domain awaiting conquest. The same idea was adopted by many modern conservationists.[106] The notion of a 'wilderness' could have even less validity in a sub-continent with a much larger human population and many millenia of agrarian civilisation. The problem would not be one of discovering nature in its prisitine state but of working out which kinds of human activity significantly reduced or enhanced biological diversity. But to do this it became necessary to see the forests, scrub lands or marshes as existing inside of human history. In the struggle for control of these areas, the notion of creating a wilderness was a means to ensure control by a preservationists at the cost of competing land-users. The issue was not one of nature versus people and became one of certain groups versus others. The idea of an inclusive notion of conservation meshed very well with innovative research in other parts of the world, especially in Latin America, but even in some of the American Indian-controlled areas in the southern USA.[107] The keynote was not a romantic idealism about such communities but hard-headed scientific work about what kinds of biodiversity could co-exist in and around areas subject to continuing but regulated human use. The survival of rare plants in the sacred groves of the Western Ghats no more seemed like an isolated or unique case, but part of a wider pattern that could help find an alternative. Unlike state systems which had, till recently, focussed mainly on large mammals, these practices encompassed a wider spectrum of diversity.[108] This struck deep at the older stereotype. In recent work in the alpine regions of the Western Himalayas, other writers have also suggested a much more nuanced view of rural relations with the natural world.[109] Not only do they eschew a romanctic 'harmony', but they show how specific patterns of use may not be as damaging as was once believed. For instance, decades of Gaddi pastoralism in Himachal have not degraded the forests, unless the degradation is seen merely in terms of the density of timber trees. Similarly, mountain ungulates seem to be able to coexist with the Gaddis provided there is a degree of tolerance by the armed men who accompany the flocks on the trails. It is notable that the debate about levels of diversity has been posed by scholars in terms of extensive forms of land use such as pastoral production and swidden cultivation.[110] The levels of plant diversity in various systems of traditional agriculture or of the local breeds of livestock can only be mainatained if stock-keepers and cultivators have a central role to play in the process of conservation. Not only are researchers not monolithic and united in support of exclusionary policies, the work in India parallels that in other regions.[111] Scientific work complements efforts of social scientists to study the dynamics of collective action systems, of how they work and why they break up.[112]

The major shift then is on the causality of the erosion of genetic diversity and the best way to conserve and enhance it. Gadgil and Rao argue the case in a recent draft bill on nature, health and education.[113] The bureaucracy is ill-equipped to meet the emerging problems of the ground, be it in terms of shifts in species abundance or diversity, or fresh threats due to pollution or other degrading factors. Conversely, the diversity of resource-use systems that vary so enormously even over small stretches of the Indian countryside are simply not amenable to efficient or just bureaucratic land control. The rich regenerative potential of local systems of resource use may not always be evident to a distant manadarin. More seriously, the information-gathering system at the disposal of the land managers as well as their skills may not register major changes fast enough. In contrast, local users have several practices that could be the core of a new strategy for conservation. They would be backed up with technical assistance and coordination but would have a central role in the process. The present Protected Areas as well as sacred groves and ponds, patches of grassland and desert scrub outside the PA system would be managed as 'safety sites'. Unlike the Supply Sites which would include the 23 per cent of the land area now under the Forest Department and the 6 per cent now under the Revenue Departments, the criterion of control would be 'safety' rather than 'supply'. The Foresters and other technical personnel would remain in the picture but their role would be akin to that of the Agriculture Department in terms of providing support, services and incentives, not direct management. The P.A. system would not be managed in isolation but be treated as part of a wider regime of control.

There are many possible problems in this alternative model, but it is ideologically significant as it marks a break with a statist system of control. The early work on sacred groves or on rural lifestyles in the Deccan was much more limited in their scope and suggestions but carried the seeds of change. Incentives to protect diversity of cultivars were suggested in the case of the Nilgiri

Biosphere Reserve. The Second Citizens Report on India's Environment also took a step in this direction.[114] This was a politically significant development because a section of the skilled and educated literati made common cause with disadvantaged groups. Such work brings together specialist knowledge with the emerging ground-level situation and offers a critique. At an international level, both biologists and social scientists are presently engaged in a debate over such issues and the Indian experience is not isolated. The Bill draws together these findings and seeks to articulate elements of an alternative structure. The actual problem in such models is their treatment of market forces. The community is to serve as a line of defence against corrosive impact such as species extermination to meet market demand or to mediate in case of conflicts over resource use. But it is not at all clear what is to stop a hamlet from cutting down a forest or draining a wetland as long as there are immediate economic returns. Many collective action systems in montane and semi-arid areas where they are probably still the most resilient, are in a transitory phase. They were never static in the past but the levels of internal differentiation and the external pressures today are of an unprecedented nature. The question is not whether such devolution must take place. There is little doubt that many of the points made by the urban intellectuals are valid: these systems are more flexible than a bureaucracy and involve people with more direct stakes in the viability of forests or wetlands than in the case of distant administrators. But the issue is a more complex one, of designing a structure of incentives that will enable such initiatives as exist on the ground to endure the impact of pressures. This, in turn, will only be possible in the context of wider changes in the system of land-use. The insights provided by the urban-based researchers and activists still have considerable relevance. The challenge is to try and work out a system of control that combines local control with tangible benefits that enable a better livelihood but also enhances the resource base. This is easier said than done. But it is a vast improvement on a tunnel vision that solely concentrates on a few protected zones protected by guns and guards. Over two decades, the urban intellectuals have gone form studying alternative systems to favouring a radical shift in the power structure to meet the dual demands of conservation and human livelihood. They have taken a step towards a notion of empowerment of disadvantaged groups, a programme which has often been integral to many movements of political assertion, but which is now being supported on new grounds: its ability to conserve biological diversity.

Rural activists

Of the above mentioned groups only the constructive workers have any direct material stakes in the outcome of human-wildlife conflicts. The rural activists are directly engaged in efforts to secure a direct participatory role for resource-users in the control of open access or common property lands, government forests, ponds, pastures and wildlife sanctuaries. The improvement of rural livelihood and of living conditions is central to their perspective and the recent attempts to defend natural areas from developers have to be seen in this light. The creation of wildlife sanctuaries seems to such groups to be simply one in a long line of events that has deprived them of their land rights. In the past, this loss of entitlement often entailed a deeper sense of cultural loss. Rural activists, obviously, do not work or exist in isolation from wider networks of protest groups that include those in towns and cities. Being based largely in villages, they share the consequences of ecological deterioration or social dislocation with those affected by wildlife conservation, big dams or commercial forestry. What matters less are the social origins of a particular activist group, and much more the kind of issues it focuses on. They take up mobilisation against dominant groups to a greater extent than the constructive workers. In fact, tribals petitioned a government committee in 1960 against the creation of a wildlife reserve in Andhra Pradesh. Their complaints were explicit and clear: The creation of a game sanctuary in the Narasampet meant that, 'They cannot hunt. They cannot even get wood from contractors; they cannot extract kopi grass which they have always used for making ropes. The once proud Koyas, hunters and lords of the forest...are today forbidden even to enter the forest and are deprived of all rights and privileges they formerly had. They cannot even remove a few stones from the area to pave the paths of their villages.'[115] Yet such concerns remained at the margins until they were again taken up in the 1980s.

The new wave of social movements did not often directly take up the wildlife question but the implications were clear as in the case of Chipko. The Valley of Flowers sanctuary was not far from the hamlet of Reni where the village women stopped a sports firm from felling trees in 1974. This movement or 'Chipko Andolan' soon won wide acclaim, and by 1980, some of its leaders were vocal in their criticism on restrictions on usufruct rights in the Valley of Flowers. The area had long been important to nearby villagers who harvested wild tubers but this limited use was seen as destructive by the Forest Department. This marked a wider agenda inclusive of plant diversity than has been the hallmark of official strategy.[116] These form a parallel to the drive by the preservation lobby to halt commercial forestry in the core areas of tiger reserves. The difference was crucial: the activists saw the survival of the mixed forests as essential for the sustenance of rural people. The displacement of villages to make way for wildlife, though not without precedent, was taken up under Project Tiger areas and in the Gir Forest by this time. Since then, the terms of resettlement and the question of how far displacement is essential have been a major bone of contention. At the time there was little sustained protest. But such strategies of creating 'people-free' zones at the core of wildlife sanctuaries were attempted in many other areas. The issue became especially tense when it was linked up with the much wider problem of the restriction of usufruct rights. Under the Wildlife (Protection) Act of 1972, there were no rights of access in national parks. In many areas, this led to protests. The Bharatpur firing in 1982 has already been taken up. In this case, the investigators were drawn from a metropolis and could not make much headway as the villagers were intimidated by the local authorities. Since then, the degree of mobilisation in and around the PAs and the kind of links, this time with the small town intelligentsia, have caused a sea-change. The expansion of the network of Protected Areas and the intensification of protection measures have provoked a strong response from resident peoples in many areas.

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This pattern emerges clearly in case of the Rajaji park near Hardwar. Carved out of the Governor General's old Shooting Blocks, the park is home not only to diverse widldlife including UP's largest population of wild elephants, but also to several people. The local Gujjars who are allied to the group Vikalp rebut the Forest Department's charges that they are over grazing the area. In 1979, the government decided to move out the Gujjars and resettle them in a housing colony. Their case has wider significance. Firstly, they point to the shrinkage of lands along their old travel routes due to extension of cultivation and forestry: confined to a smaller area, they see themselves as the victims of the process of development. Secondly, they refer to the extensive encroachment on the forests of the area by an irrigation channel, an army ammunitions depot and several public and private sector industrial units. In addition to mass protests in 1991-94, they also challenged the administration to hand over the park to them for direct management.[117] More recently, in conjunction with the Bombay-based Indian People's Tribunal for Human Rights, they organised public hearings by a retired Chief Justice of a High Court. Among other issues, Justice Potti also enquired into possible alternatives to defuse tensions while protecting forests. The report itself is a complex one: it offers a critique of the existing arrangements for rehabilitation and calls for a more acceptable package that addresses the needs of the Gujjars. Justice Potti raised the issue of compensation for victims of animal attack and suggested they be made equal to those given to airline crash victims. In the longer term, Vikalp argues that the survival of Rajaji and nearby forests is not possible simply through sacrifices by the resident population. The diverse groups in the area: the Gujjars, the inhabitants of the Forest Villages who are tenants of the Forest Department, taungya-cutters who were brought in to raise tree crops, artisans who collect baan grasses from the forest for rope-making, all took part in the consultations. This itself was significant as the diversity of interest groups is often held as a reason against local control. No easy panacea emerged but the very existence of the process was significant.[118] The destruction of the forest is the consequence of wider processes of social and economic change that need to be taken up. This is illustrated with reference to the firewood demands of the nearby town of Hardwar which powers denudation of substantial areas. In fact, travelling to Hardwar from Delhi, it is impossible to miss the multi-storied flats that are creeping up towards the river, cutting off the route for the few bull elephants still courageous enough to make the journey.[119] The Gujjar and the elephant are both hanging in the balance and the former are fighting back.

Nor is this an exception. The general impact of industrialisation and the double standards adopted by the administration to forest-dependant people led to the organisation of the Jungle Jeevan Bachao Yatra ('Save the Forests, Save our lives' march) in 1995. In the recent past, this technique of processions criss-crossing the countryside to bring together affected and concerned citizens has been a favourite of environmental movements. There have been many yatras like the Askot-Arakot march of Chipko students in 1974, Sunderlal Bahuguna's Kashmir-Kohima trek in 1982, the fisherfolk march along the sea coast in 1989 and the long march of the anti-dam protestors in the case of the Narmada project in 1992.[120] But this was the first time that the wildlife-people issue was taken up through this medium. At the end of the 15,000 kilometre march the organisers issued a statement denouncing the creation of 'sarkari sher aur sarkarki ped' or governmental tigers and trees.[121] In most places on the route, at the Gir Forest in Gujarat or at Rajaji, the tale was a similar one. The deprivation of access to the forests or natural areas had deprived people of sustenance but opened up the area to contractors and other rapacious developers. It is noteworthy that groups like the Tarun Bharat Sangh in Sariska have done more than protest against closure of access. They have planted indigenous trees on common lands. and fought mining interests to a standstill until the state government stepped in on the other side. This consciousness is also evident in the revival of protected forests known as rhoonds and deobanis that are protected by the villagers.[122] As in Rajaji, the 'petty oppressions' by the Forest Department have been a major grievance. They only illustrate the wider dilemma of a department with rights over residents and usufruct right holders.[123] The upshot of the Yatra of 1995 was itself mixed and it attracted criticism from some quarters for not being strident or radical enough.[124] The debate continues but the significance of the event is easy to miss out on. The Yatra was designed to act as a stimulus for further contact and dialogue and in the six months that followed it, grassroots groups in three states organised their own networks to continue contact and exchange of information. What are the main contribution of the rural activists involved in the Yatra and elsewhere in the country? Firstly, it will now be difficult to use coercive powers to relocate or displace people in and around Protected Areas. Unlike urban intellectuals or pragmatic conservationists, most rural activists live and work among the communities whose cause they espouse. Their strength is also linked to a significant change: the willingness of politicians to be more sensitive to rural protests.[125] Such changes are due to executive action and rural activists demand legal rights. At present, the Collector may grant concessions under an amendment in the Wildlife Act made in 1991.[126] Livelihood issues are paramount for the rural activists, who see the bureaucracy as having failed to improve the living conditions in these areas. Commercial interests in particular non-tribal traders and large industry are regarded as exploiters of both people and nature. If these terms seem ambiguous it is necessary to reiterate that unlike the other groups studied here, the rural workers are not attached to institutions of higher learning and are engaged in mobilisation often against heavy odds. Their view of nature and the question of biodiversity requires more elaboration and attention. One approach has been to see them as standard-bearers of traditions that are more in harmony with nature than the industrial mode of development, socialist or capitalist. Since wildlife is not always central to the agenda as in the case of preservationists, the rural activists are often pilloried for not being sensitive to long-term issues. In fact, the point can be tuned around. In several cases, certain projects which would be deeply damaging not only to wild animals or plants but to the ecology of vast areas have been stalled only because of rural protest by disadvantaged social groups. What is valid is the fear that a successful movement for assertion may not be able to control deeper market forces that may corrode the resource base. But bureucratic regimes have hardly done very well on this count and have faciliated and assisted such corrosive forces.

The preservationists are strident against claims of rural activists who advocate continued use of the Protected Areas. Surely something is seriously wrong with a system that cannot provide for the disadvantaged from 96 per cent of the land area. The rural activists reply that they were not involved in demarcating the four per cent and in any case, this struggle for control is by no means restricted to these areas. The other problem, of providing safe havens for plant and animal life free from all people, does not appeal to the rural activists in the same way that it does to the preservationists. The activists feel that tribals or pastoralists have a better record of living with natural systems than urban or rural elites. Sacred groves and religious taboos on harvesting wildlife are cited to buttress such claims. If at all core areas are to be set aside, the activists would claim that the residents have to play a part in delineating the zone. Such areas can possibly be created elsewhere, but the nub of the problem will lie in participation and control which cannot be left solely with the authorities. The emergence of networks of the action groups working on the periphery of Protected Areas is a major landmark. As with the forest question, local experiences are now being discussed at a wider level, not only in terms of solidarity and joint action, but also to evolve a common platform. The actual evolution of institutions and mechanisms for rural control has a long way to go, but the process has begun. Local control cannot, in itself, resolve issues: the wider institutions of governance can often be more than willing to bend over to industrial interests.

A process of interaction

The critics are united by their disaffection with the prevalent mode of preservation. They do not believe in a policy of total environmental protection. Their grounds for criticisms and their levels of alienation from the dominant model vary and there is also room for mutually contradictory views among them. In their own ways, each is questioning the Forest Department's monopoly of power and knowledge in the Protected Areas. Though their concerns and prescriptions vary, the critics stand for changes of strategy and policy vis-a-vis the conservation of biological diversity.

This is most clearly evident in case of the rural activists and the pragmatic conservationists. The former have a constituency that primarily consists of the rural poor who live in hilly and mountainous regions, areas with dryland agriculture and animal husbandry. These are populations partially or wholly reliant on gathering forest products whether for subsistence or for sale. The relocation of such villagers, whether tribals or caste Hindus, to make way for wildlife, is strongly opposed by the rural activists. Pragmatic conservationists, while often critical of the administration's insensitive methods, broadly agree that people must be removed from prime wildlife habitats if this is essential for rare species. The question goes beyond one of rehabilitation and relocation to usufruct rights. The pragmatic conservationists are mainly wildlife biologists whose prime aim is to evolve management programmes for specific species. They approach the issue from the standpoint of enhancing the survival prospects of their target species or ecosystems. Their findings often pit them against the older 'hands off' approach of the preservationists, but their methodology is still geared to the wildlife much more than to the people. Rural activists, at least those who are sensitive to ecological issues, see the issue in terms of livelihood and survival of social groups marginal to the power structure. It would make little tactical sense for them to admit that the sustenance of disadvantaged groups may at times be in irreconcilable conflict with wild plants or animals. Their prime focus is not only on redressing grievances, which the pragmatic conservationists are willing to acknowledge.

Some voluntary groups have gone so far as to ask that they and other local resident in and outside the park be given control of the area. Such a prospect would not be welcome to even the most open of the pragmatic researchers. Where there is room for joint action is with regard to specific grievances such as wild animal depredations on crops or attacks on people. The biologists who have documented these problems in detail are in a position to lobby governments to be much more responsive both in preventive terms and to provide effective compensation. Ironically, the very structure of consultation that incorporates such experts also slows down remedial action. Professional foresters are apt to look upon the researchers as upstarts and to drag their feet on implementation of programmes for culling male elephants or lions as the case may be. The research scholar who has logged several hundred hours tracking the wild animals or assessing crop damage is still marginal to the community of forestry. They may have the expertise but they lack directorial power. As members of the middle class or literati they do not experience the problems of deprivation so clear to the rural activists. But there is little doubt that the pragmatic conservationists are the most ambivalent of all the groups of dissenters and critics. Their findings point in one direction and their professional life makes it essential for them to remain in close contact with the very branch of government whose choices they often disagree with. The growth of autonomous research institutions has increased their leeway and given them a separate institutional base outside the Forest Department, but they can go a certain distance and not beyond.

Ruralactivists have a much wider agenda and programme. They seek to question not only wildlife conservation policies, but the wider gamut of issues related to development. These include the terms of trade with the mercantile groups or the foresters who purchase forest products, the denial of land rights and credit to the poor and the more mundane but critical problems of the lack of even basic social services such as health and education. The strategy is one of struggle, all the more so because they are often at loggerheads with the Forest Department which is their overlord or controls access to grazing grounds. Increasingly, human rights violations have come to be prominent in the issues raised by such groups. These efforts are now backed up by their allies in urban areas who also call for an alternative mode of conservation and development. The urban intelligentsia has now come to identify with the rural activists' agendas much more closely then in the past. Alternative systems of protection such as sacred groves were initially seen as an adjunct to the existing PAs but the debate has now moved ahead. The emergence of cross-regional and state level coordination has had a lot to do with the joint efforts of the urban intelligentsia and the rural activists. What is equally important is the strong advocacy of decentralised systems of resource control. The Gadgil-Rao Bill of 1995 calls for an extensive restructuring of control of the existing Protected Areas as safety sites, giving village-level committees a central role in delimiting boundaries, assessing crop damage and ensuring protection from rapacious commercial interests. It is true that the links on the wildlife front are still nascent compared with the networks on large dams or commercial forestry. But this has to do with both the new wave of protest against sanctuaries and the awareness among both urban and rural concerned citizens that the destruction of the natural areas was not their objective. The issue being contested is not only one of equity but also of sustainability: this may have been implicit in many adivasi or peasant movements in the past but it is being made in an explicit manner now.

There are still differences in emphasis between the urban and rural advocates of local control. The former often attach considerable importance to biological diversity and often favour service charges to communities or groups who protect rare plants or animals. By the Nineties, many radical rural groups who would once have scoffed at the notion of rights of nature having an intrinsic worth, have come to champion such notions. They ground their case in the continued existence of tribal or peasant traditions that view nature not as separate from the human world but as part of a unified whole. The urban intellectuals, often a part of the middle class, acknowledge the role of such ideas but they are more sceptical of their viability in the face of market forces. Perhaps, this is the strongest and weakest part of their case. They are on good grounds in favouring positive incentives for conservation. This at least makes an ideological point, namely that it is the maldharis of the Gir who should be rewarded for co-existing with lions. They can and should be turned from antagonists or victims into protectors and it is the duty of society at large to assist them in every way possible. But it is still not clear how such incentives are to be worked out in economic terms. Local protection is often a success because it is rooted in cultural or religious notions and practices. It may not be possible to affix a monetary value on the protection of pipal trees in a village grove or of sacred crocodiles in a lake. In trying to defeat the market system, the urban intellectuals have to beware of siding with the very forces that may undermine their wider aims. At another level, some among the urban intellectuals have probably gone too far down the road in romanticising traditional systems. This is significant in so far as it displaces the old stereotype of rapacious and destructive tribals or peasants who will destroy the fauna and flora unless checked by government. It is also important that the ways of relating to nature that were earlier considered the preserve of the ethnographer be studied by biologists or historians. The division between 'science' and 'local knowledge' may have been necessary two decades ago to prevent uncritical glorification of the former and outright dismissal of the latter. But it may be much more useful to simply have a critical perusal of 'actually existing practice' rather than romanticise traditional systems. This is especially necessary considering the degree of market integration and the rates of demographic expansion that we are often dealing with. Self-reliant agrarian communities linked together in a loose federal arrangement may or may not be ideal, but they are hardly practicable in today's world. In any case, a dialogue about actually existing practice will enable much more creative and relevant interventions both at a conceptual and a practical level than uncritical traditionalism.

Both rural and urban critics need to be much more specific about what we mean by local control. Many Protected Areas contain people living within their confines, on the perimeter and groups who may reside further away but use the tract at certain times of the year for limited purposes.[127] Further, there are those who draw on fodder reserves in sanctuaries in pinch periods as when the rains fail. It is not often clear on what basis local control will work, whether the critéria are to be the length or place of residence. Even more complicated is the conflict between locally resident cultivators who may use a forest and nomadic groups with herds who are themselves the victims of land acquisition by government but add to the pressure on the resource base in or around a sanctuary. The usual answer is to allow such issues to be decided by consensus and open negotiation. This still does not explain what the minimal points of agreement will be and how they are to be ascertained. Even more crucially, who is to play the mediating role if not the government in a democratic system? And if it is to be the administration, there is the vexed question of which element in the bureaucracy is to be given weightage and how it is to be made accountable and transparent. Local control can only work within a wider framework conducive to conservation and less prone to short-term growth of the kind that corrodes the resource base. There has to be a role for the state but it will have to be very different from what it is today. There is also some sign that, as in several strong agitations against denotification to facilitate industrial interests, local people will have a prior say before such de-notification permitted. Similarly, the existing arrangements under which the Wildlife Wing assists in protection of sacred groves or waterbird sanctuaries maintained by villagers could be given a new legal status as 'people's protected areas'. Yet, these measures may not go far enough. There is an urgent need to go much further in evolving alternative systems of control that build on existing efforts but strengthen them. If the rural or urban critics of preservation are to succeed, they have to evolve alternative structures of power.

The constructive work groups have a very critical role to play. Their strength lies in their ability to evolve creative solutions to existing problems that not only improve livelihood but also increase the elbow room of disadvantaged groups in their struggles. In the process, groups have come up with workable alternatives that expand the scope for reform within the existing system. The question which still remains is how far these efforts can supplement the work of rural activists or urban reformers in evolving an alternative framework. The problem of tapping market forces for conservation is all the more problematic. If it is a question of organising cooperative for venom-extraction or for tendu leaf trade, there is no question that organisation is essential to bargain with middlemen or government agencies. The danger here is that constructive work may often stop at just that, and the massive injections of funds now being made may simply give a fresh lease of life to the old way of operation, in which government departments increase their own clout through injections of funds.

Conclusion

If the older preservationist agenda looks like it is in deep trouble, it still has a lot of life left in it. The crisis of an old order need not necessarily be a prelude to its collapse. None of the critics named here has any sympathy for the agenda of unreconstructed developmentalism that the preservationists did so much to critique. Their shortcoming was their reliance on the state machinery, in particular on legislative and executive power of the Union government. The power of the Centre in development policy is now much more limited than in the early 1970s, for both political and economic reasons, but the pressure for generation of revenue and attracting industrial investment is all too real at the state level. The critics of today often equate the preservationists with the forces of short-sighted development. This is perhaps correct in so far as both support the existing power structure and only disagree with the way power is to exercised. One wants to cut down a forest to make way for dam, the other to save it for scientific research and leisure. There is still a deep antagonism between the constituencies of the middle class preservation lobby and the rural activists. Wildlife enthusiasts feel that animals have primacy over villagers at least within the wildlife reserves. There is 'no other way to successfully run a reserve, and there can be no compromise on the issue'.[128] This is the nub of the issue: in their own ways, all the groups studied here are convinced of the viability of alternatives. Nowhere will the struggle for control be as sharp as between the rural activists and the preservation lobby. Protection of wildlife 'for its own sake' was both a utilitarian and a romantic endeavour. It was preserved for a certain kind of use (scientific research or wildlife-watching) in preference to other uses (livelihood and survival).[129] In the Indian case, neither a technocracy or bureaucracy acting as the arbiter of conflicts nor a free market system which may tilt towards privatisation of open access resources would address ecological issues adequately. The assertion of people's rights has the potential for a different kind of conservation-oriented control of their lives and lands. The very idea of a forest separate from people is seen as 'an illusion', that only denies, 'the unalienable relation of nature to man.' The question itself becomes one of working out a new set of relations with the forest which will be enduring for both people and the natural world.[130]

How this will be done at a time of demographic growth and agrarian intensification will be a major challenge and site-specific approaches will probably play a vital role. These issues cannot be divorced from the wider ecological dilemma. Local institutions may be open to corrosion by market forces, due to a combination of external pressures and social change among what may seem like homogeneous rural communities. The risks inherent in political reform must not be allowed to postpone change but the wider economic context of incentives for destructive behaviour has to be changed if there is to be any hope. This issue calls for more thought and action. Some arch-preservationists may look back on the 'golden era' of the Indira years and yearn for them.[131] But the clock cannot and should not be turned back. The maturing of democracy and political assertion by disadvantaged sections is now far more advanced than in the Indira era. The traditions represented by Vedanthangal are now locked in contest against those symbolised by Asoka.

FOOTNOTES

1. M. Krishnan, Monthly Lecture, National Museum of Natural History, New Delhi, 10 Nov. 1979, unpublished.

2. M. Krishnan, 'Preservation in perpetuity of 5% of India's heritage', Report of the Committee for recommending legislative measures and administrative machinery for environmental protection, Department of Science and Technology, New Delhi, 1981, Annexure II, pp. 89-92. The committee was chaired by N.D.Tiwari. (Hereafter Tiwari Report).

3. M. Krishnan, 'The environment-disaster ahead', Sunday, Annual number, (1977); 'A wildlifer's apprehensions', Hornbill, vol. 2(1989), pp. 12-14; 'Can it fail?', Project Tiger Newsletter, no. 1(1978), no pagination. In 1989, he argued in favour of 10 per cent of the land being set aside for total preservation.

4. Krishnan, 1981, p. 82.

5. The best source for the area, .status and conflicts is A. Kothari, P. Pande, S. Singh and D.Variava, ed., Management of national parks and sanctuaries in India. A status report, Indian Institute of Public Administration, New Delhi, 1989. Hereafter Kothari, Management. See also W.A.Rodgers and H.Panwar, Planning a Wildlife Protected Area network in India, Dehra Dun, 1988, vols. I-II.

6. B.Sahgal, 'Denotify and be damned', Sanctuary, vol. 13(1993), no pagination.

7. B. Dogra, 'Parks and people-Report from a Workshop', Sanctuary, vol. 13(1993), pp. 59-61. The workshop was held at the Lal Bahadur Shastri Academy of Administration, Dehra Dun, Oct. 1993.

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9. Shekhar Singh, 'JPAM-some policy issues', IIPA workshop, 1994. Singh, one of the co-authors of the 1989 report disagreed strongly with Kothari's advocacy of joint management. The notion of rights of nature and of the limits to carrying capacity were carried forward uncritically from the 1989 report, see Kothari, Management, pp.1-3.

10. V. Thapar and P.Manfredi, 'Saving our forests' Seminar, vol. 426 (1994), pp.,27-30.

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15. B.Dasgupta, 'The environment debate: issues and trends', Economic and Political Weekly (Hereafter EPW) vol.13 (1978), 395-400, p.400, Also in R.Guha, 'Ideological trends in Indian environmentalism', EPW, vol.23(1988), pp.2578-81.

16. Bittu Sahgal, 'If nature does not survive neither will man', Sunday Express, 13 Oct. 1985, describes the Collector as the 'maai-baap' or paternal protector to the people. See his 'people and sanctuaries' in A Agarwal and S.Narain, State of India's Environment, The 2nd Citizen's Report 1984-85, Centre for Science and Environment, New Delhi, 1985, p.317. Contrast this with his critical attitude of the role of government in Sanctuary magazine, 1993 quoted above; also his Environment and Wildlife, The Parisar Annual lecture, Pune, 1992.

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